AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE
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Serial Number: 10/723,254
Dkt: 279.628US1
Filing Date: November 26, 2003
Title: MORPHOLOGY-BASED DIAGNOSTIC MONITORING OF ELECTROGRAMS BY IMPLANTABLE CARDIAC DEVICE

IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended)   A system for recording and presenting electrophysiological data, comprising:

an implantable cardiac device having a first sensing channel for sensing cardiac electrical activity and generating electrogram signals;

~~wherein a controller of the implantable cardiac device is programmed to compute a plurality of representative electrograms with respect to time, with each such representative electrogram representing a different defined time period and being derived from one or more electrograms recorded during the defined time period corresponding to that particular representative electrogram;~~

~~wherein representative electrograms derived only from electrograms recorded when a measured heart rate is within a specified range; and,~~

wherein a controller of the implantable cardiac device is programmed to:

record electrograms over a specified long-term period of time,

generate representative electrograms for each of a plurality of short-term time intervals within the specified long-term period of time, and

compute the representative electrogram for a particular short-term time interval from one or more electrograms recorded during the particular short-term time interval only when the patient's heart rate is within a specified range; and,

an external programmer configured to download representative electrograms from the implantable device and ~~generate an aggregate display of the representative electrograms in which the representative electrograms are overlain upon one another~~ display an aggregate of representative electrograms in graphical form as indexed by the plurality of short-term time intervals.

2. (Original)   The system of claim 1 wherein each representative electrogram is an average of a plurality of electrograms recorded during the defined time period.

3. (Original)   The system of claim 1 wherein each representative electrogram is a single electrogram recorded during the defined time period.

4. (Original)   The system of claim 1 wherein the representative electrograms are intrinsic electrograms.

5. (Original)   The system of claim 1 wherein the representative electrograms are evoked response electrograms.

6. (Cancelled)

7. (Original)   The system of claim 1 wherein the representative electrograms are displayed on a display screen of the external programmer.

8. (Original)   The system of claim 1 wherein each of the representative electrograms is displayed as a graph of the electrogram's magnitude with a shading or color of the graph identifying the defined time period represented by the representative electrogram.

9. (Original)   The system of claim 1 wherein the controller is programmed to continuously generate representative electrograms for consecutive defined time periods.

10. (Original) The system of claim 9 wherein the controller is programmed to maintain a specified number of representative electrograms in memory with the oldest representative electrogram being discarded.

11. (Currently Amended)   A system for recording and presenting electrophysiological data, comprising:

an implantable cardiac device having a first sensing channel for sensing cardiac electrical activity and generating electrogram signals;

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~~wherein a controller of the implantable cardiac device is programmed to store a plurality of representative electrograms with respect to heart rate, with each such representative electrogram representing a defined heart rate range and being derived from one or more electrograms recorded when the heart rate is within the defined range; and,~~

wherein a controller of the implantable cardiac device is programmed to:

record electrograms over a specified long-term period of time,

generate representative electrograms for each of a plurality of heart rate ranges during the specified long-term period of time, and

compute the representative electrogram for a particular heart rate range from one or more electrograms recorded only when the patient's heart rate is within the particular heart rate range; and,

an external programmer configured to download representative electrograms from the implantable device and ~~generate an aggregate display of the representative electrograms in which the representative electrograms are overlain upon one another~~ display an aggregate of representative electrograms in graphical form as indexed by the plurality of heart rate ranges.

12. (Previously Presented)   The system of claim 11 wherein each representative electrogram is a single electrogram recorded when the heart rate is within the defined range.

13. (Original) The system of claim 11 wherein each representative electrogram is an average of a plurality of electrograms recorded when the heart rate is within the defined range.

14. (Original) The system of claim 11 wherein the representative electrograms are intrinsic electrograms.

15. (Original) The system of claim 11 wherein the representative electrograms are evoked response electrograms and wherein heart rate refers to pacing rate.

16. (Original) The system of claim 11 wherein the representative electrograms are displayed on a display screen of the external programmer.

17. (Original) The system of claim 11 wherein each of the representative electrograms are displayed as a graph of magnitude versus time or sample number with a shading or color of the graph identifying the defined heart rate range represented by the representative electrogram.